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Review of Research Papers Related to V_4-cordial Labeling of Graphs

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Review of a Research Paper entitled, "Some V_4-cordial graphs"

Concise Summary:

Authors: M. Seenivasan & A. Lourdusamy.

Published in: Sciencia Acta Xaveriana, Vol. 1(1)(2009), 91-99.

In this research paper authors investigate a necessary condition for an Eulerian graph to be V_4-cordial. They also proved that all trees except P_4 and P_5 are V_4-cordial and the cycle C_n is V_4-cordial, $n \neq 4$ or n does not congruent to $2(mod4)$.

Evaluation of Paper:

1. **Positive Aspects:**

(i) All the figures are very nicely drawn so any one can understand easily.

(ii) The proof of Theorem 2.4 "Let f be a V_4-cordial labeling of a graph G with P_4 and uv be an edge of G such that $f(u) = 0$ and $f(u) = f(v)$." is very useful to find some more graphs which admits V_4-cordial labeling and also this proof can be used for finding V_4-cordiality of generalized graph of any graph.

2. **Negative Aspects:**

(i) The proof of Lemma 2.6 "If all trees on $4m$ vertices are V_4-cordial then all trees on $4m+1$, $4m+2$, $4m+3$ vertices are also V_4-cordial." contains very less explanation and not given any illustration so it's very difficult to understand.

(ii) The proof of Theorem 2.7 "All trees except P_4 and P_5 are V_4-cordial." is divided into two cases. In each case the explanation is difficult and authors are not given any illustrations so it is very difficult to understand the proof.

3. **Discrepancy:**

In Corollary 2.3 "The cycle C_n is not V_4-cordial, where $n \equiv 2(mod\ 4)$, the generalized Peterson graph $P(n,k)$, where $n \equiv 2(mod\ 4)$ and $C_m \times C_n$, where m and n are odd are not V_4-cordial." there is no given any proof about V_4-cordiality of Peterson graph $P(n,k)$ and $C_m \times C_n$.

Further comments:

(i) The authors use V_4-cordiality and this labeling is such a nice combination of group theory and graph theory. This labeling can be use in application of abstract algebra in graph theory.

(ii) The authors give the proof of V_4-cordial labeling of standard graphs Path and cycle. By using these graphs there may be found more graphs which may contain V_4-cordiality.

(iii) Authors should have to give some illustration so anyone can understand.

Review of a Research Paper entitled, "Generalized Graph Cordiality"

Concise Summary:

Authors: O. Pechenik & J. Wise.

Published in: Discussiones Mathematicae Graph Theory, Vol. 32 (3) (2012), 557-667.

In this paper authors investigate some A-cordial graphs, V_4-cordial graphs and Q-cordial graphs. Authors proved the following results. All complete bipartite graphs are V_4-cordial except $K_{m,n}$, where $m,n \equiv 2(mod4)$. All Paths P_n are V_4-cordial except P_4 and P_5. All cycles C_n are V_4-cordial except C_4, C_5 and C_k, where $k \equiv 2(mod4)$. All ladders $P_2 \times P_k$ are V_4-cordial except C_4. All prisms are V_4-cordial except $P_2 \times C_k$, where $k \equiv 2(mod4)$. All hypercube are V_4-cordial, except C_4.

Evaluation of Paper:

1. **Positive Aspects:**

In this paper authors proved all ladders $P_2 \times P_k$ and all prisms $P_2 \times C_k$ are V_4-cordial. These graphs ladders and prisms are obtained by operation on standard graphs, which is very hard, but the authors make it very easy.

2. **Negative Aspects:**

(i) In Theorem 3.4 authors proved that the path P_n is V_4-cordial unless $n = 4, 5$. They proved this result by induction on n. But in 2009 Seenivasan and Lourdusamy[4] have been already proved that all trees except P_4 and P_5 are V_4-cordial and path P_n is one type of tree.

(ii) In theorem 3.5 authors proved that the cycle C_n is V_4-cordial for n does not congruent to $2(mod4)$ and $n \neq 4, 5$. But Seenivasan and Lourdusamy[4] have been already given a proof for V_4-cordiality of cycle C_n.

(iii) In this paper all symbols of graph operation do not appear properly.

(iv) The authors prove that the d-dimensional hypercube Q_d is V_4-cordial, but the authors have not been introduced the definition of d-dimensional hypercube Q_d.

Further comments:

(i) This paper contains three types of labeling defined as A-cordial labeling, V_4-cordial labeling and Q-cordial labeling. Using this combination of labeling authors can see the behavior of graphs in different labeling.

(ii) Authors must have to give the definitions of new words.

Review of a Research Paper entitled, "Z^2_2-cordiality of K_n and $K_{m,n}$"

Concise Summary:

Authors: Adrian Riskin.

Published in: Cite: arXiv:0709.0290v1 [math.CO](2013).

In this paper author introduce new graph labeling known as Z^2_2-cordial labeling (V_4-cordial labeling). Author study the Z^2_2-cordiality of K_n and $K_{m,n}$. Author proved few minor results and questions on the Z^2_2-cordiality of trees.

Evaluation of Paper:

1. Positive Aspects:

(i) The author has introduced the new labeling Z^2_2-cordial labeling (V_4-cordiality) obtained from A-cordial labeling.

(ii) Author have been given a Z^2_2-cordiality of two graphs K_n and $K_{m,n}$ and these two graphs have many applications in engineering.

2. Negative Aspects:

(i) In this paper author introduce Z^2_2-cordiality, but the author does not give an exact definition of Z^2_2-cordiality.

(ii) The author does not give any illustrations in all theorems.

Further comments:

(i) The result $K_{m,n}$ complete bipartite graph is Z^2_2-cordial can be extended to more generalize as complete k-partite graphs are Z^2_2-cordial or not.

(ii) Author must have to give enough illustration for better understanding.

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